NASIS

National Soil Information System

Briefing Notes August 2000 Number 1a

Current Issues – NASIS Interface Design

Introduction

When we think of NASIS, we generally think of the X-Windows user interface with tables, scroll bars and buttons. For some of us, that interface seems awkward and difficult to use, especially for data entry. Why was NASIS designed this way? Isn't there a better way to enter and edit soil survey data? To help answer these questions, let's look at some history.

Original Design

The original NASIS interface was designed to meet the needs of primary NASIS users who, in the early days of NASIS, were skilled soil dataset managers responsible for conversion of soil survey data from the State Soil Survey Database to NASIS.

To get the best interface design, NASIS developers recruited data set managers from several states to help define the software capabilities needed to manage soil survey data. These DSMs asked that the interface display as much information as possible on the screen at one time, always keep the information in context, provide a wide range of global editing functions, and automatically validate data wherever possible. In short, they wanted a powerful set of data editing tools, maximum flexibility, and a compact display of data. Of the various designs considered, a spreadsheet style table editor in a graphical user interface – the NASIS interface we see today – most closely matched their needs. But, that's not the end of the story.

Alternative Interfaces

During discussions with the data set managers, NASIS developers recognized that alternative interfaces would be needed to satisfy the needs of other soil scientists who would eventually use NASIS. Consequently, NASIS developers created a basic internal design that allows a wide variety of alternative user interfaces to be used with the NASIS database.

One of these alternative interfaces has already been implemented. The web-based Soil Survey Schedule is the second widely used interface to NASIS. It is designed to meet the specific needs of a narrow group of soil scientists at digitizing units and National Headquarters. Although the

functionality of this interface is limited, it meets the needs for this group of users quite well.

Another alternative interface is currently under development. The WinPEDON program will provide an interface which is optimized for data entry of soil profile descriptions and site data. WinPEDON is designed for field soil scientists who are operating at locations without a direct connection to NASIS or for those who simply want to use an interface optimized for data entry. Because WinPEDON will operate independently, descriptions entered in WinPEDON will be held temporarily and loaded into the permanent NASIS database at a later time.

Future Outlook

NASIS developers fully expect that many new interfaces will be needed and some of the existing interfaces will need to be re-engineered. To get the best designs, a new cadre of soil scientists will be needed to define requirements for these interfaces – requirements that meet their specific needs.

However, development of each interface requires a commitment of time and resources. The Soil Survey Division, with help from the Soil Business Area Analysis Group (SBAAG), prioritizes the need for new or re-engineered interfaces commensurate with other critical work on the National Soil Information System. Priorities are always changing, but for now it seems that we can expect minor improvements to the three current interfaces, but few dramatic changes.

Work is underway, however, on user interfaces that simply display soil data but do not have any editing capability. The Soil Data Viewer is an example of one of these interfaces. As data distribution and data warehousing technologies improve over the next several months, we can expect new interfaces that provide access to soil survey data for a wide variety of data users.

For More Information

Russ Kelsea, NASIS Data Steward
National Soil Survey Center
100 Centennial Mall North
Lincoln, Nebraska 68508
402-437-5878
russ.kelsea@nssc.nrcs.usda.gov

Ken Harward, NASIS Project Manager
Natural Resources Research Center
2150 Centre Avenue, Building A
Fort Collins, Colorado 80526
970-295-5474
kharward@itc.nrcs.usda.gov

See also:

Information about NASIS at
http://nasis.nrcs.usda.gov

Information about SBAAG at
http://nasis.nrcs.usda.gov/sbaag